

BIPOLAR DEVICE HAVING NON-UNIFORM DEPTH BASE-EMITTER JUNCTION

ABSTRACT OF THE DISCLOSURE

A non-uniform depth base-emitter junction, with deeper junction at the lateral portions of the emitter, preferably coupled with a recessed and raised extrinsic base, bipolar transistor, and a method of making the same. The bipolar transistor includes a substrate, a silicon germanium layer formed on the substrate, a collector layer formed on the substrate, a recessed and raised extrinsic base layer formed on the silicon germanium layer, and a silicon pedestal on which an emitter layer is formed. The emitter has non-uniform depths into the base layer.